



WATER MANAGEMENT IN CENTRAL ASIA AND THE ACTIVITIES OF UNECE

Bo Libert

United Nations Economic Commission for Europe, Switzerland

The water situation in Central Asia is difficult in particular after the cold winter in 2007/2008. UNECE work on water in Central Asia builds on: the United Nations Special Programme for the Economies of Central Asia (SPECA) and the application of the UNECE regional environmental conventions. The UNECE promotes the existing international legal framework and develops capacity for its application in the region. Its activities include support to the Chu-Talas Commission, the development of the Central Asian Regional Water Information Base, the effective implementation of the EIA Convention, work on dam safety, regional cooperation on water quality and integrated water resources management.

1 The critical water situation in Central Asia

The water situation in Central Asia is dire – the Aral Sea is still shrinking, upstream and downstream countries are not agreeing on water release regimes and water distribution, energy and irrigation sectors are competing, water ecosystems are deteriorating further and climate change may irreversibly decrease water availability. It is likely that Afghanistan will use more water from the Amu Darya River in the near future.

Contrasting the overall situation, the stabilization of the Northern Aral Sea is a positive development, leading locally to a more stable ecosystem and possibilities for the population to develop fisheries as a source of income. This is the result of Kazakh efforts to build a dam to seal off this part of the Aral Sea, so the inflow from Syr Darya can be accumulated.

After a very cold winter in Central Asia in 2007/2008, the water situation is even more acute and political relations are strained. The extensive use of hydropower for heating from winter releases in Kyrgyzstan has resulted in a very low level of water in the major Toktogul Reservoir on the Naryn, a principal tributary of the Syr Darya. As a consequence, the downstream countries

Corresponding author:
Bo Libert
Regional Adviser on Environment,
United Nations Economic Commission for Europe
Palais des Nations
CH-1211 Geneva 10, Switzerland
Email: bo.libert@unece.org

Uzbekistan and Kazakhstan cannot get as much water for irrigation in the spring and summer from the Syr Darya in 2008 as in average years.

The past winter also had severe consequences for energy-poor Tajikistan, with significant losses of human lives and livestock. Basic services such as electricity and water supply were not available for weeks, even in the capital Dushanbe. The last winter, the coldest in several decades, demonstrated the urgent need for Tajikistan to develop reliable energy supplies.

Since it became a sovereign country, Tajikistan has placed development of hydropower in the Amu Darya basin high on its national agenda. This objective has become even more important after the experiences of the cold winter. The Sangtuda I and II hydropower stations on the Vakhsh River, a major tributary of the Amu Darya, are being constructed with the support of Russian and Iranian capital, but the major Rogun hydropower station, also on the Vakhsh, is still without proper financing. Political support from the downstream countries Turkmenistan and Uzbekistan would make it easier to attract capital.

Several regional organizations are involved in efforts to resolve these conflicts. The Interstate Commission for Water Coordination (ICWC) and the International Fund for the Saving of the Aral Sea (IFAS) were established directly after the dissolution of the former Soviet Union, but lately the Eurasian Economic Community (EurAsEC, includes Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan but not Turkmenistan) has also supplied a forum for negotiations. In particular ICWC is an important forum for the resolution of operational water management problems since the beginning of the 1990s. However, the serious situation in 2008 prompted a series of bilateral and multilateral meetings bypassing the regular regional structures.

United Nations agencies and other international organizations are left outside the negotiations, but make efforts to join forces to assess the situation in advance of the coming winter. The EU role has not been very incisive in the region, however, with the

adoption of its strategy for Central Asia it may play an more important role in the future. Tentative investors from the Russian Federation are also active in discussions on financing for the Rogun reservoir and hydropower station.

It is a general problem in the development of integrated water resources management in Central Asia that authorities for water management and environmental protection are separate. Water management but not environmental authorities are involved in regional water cooperation reflecting that water use in the short term for irrigation is more important than the protection and sustainable use of water.

2 SPECA and the UNECE conventions

UNECE work to improve water management and cooperation in Central Asia build on two pillars/mandates: the United Nations Special Programme for the Economies of Central Asia (SPECA)¹ with the SPECA water and energy programme of work, and the application of the UNECE regional environmental conventions.

SPECA was launched in 1998 on the request from the region to strengthen cooperation in Central Asia and its integration into the world economy. UNECE and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) provide support for the SPECA programme.

In 2004, experts from Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan produced a regional water and energy strategy (UNECE, UNESCAP, 2004) within the framework of the SPECA working group on energy and water resources. The strategy was one of the first documents to clearly make links between water and energy issues. The strategy, endorsed at different levels by four of the five Central Asian countries, outlines needs for action in the water and energy sectors in the shorter and longer terms for the benefit of the whole region. For instance, the strategy stresses the importance to develop a legal framework



Figure 1: Map of Central Asia. Source: United Nations, Department of Public Information (1998)

for water and energy cooperation, to strengthen national and regional institutions, to improve monitoring of and information on water resources, and to protect water and energy resources. Due to unresolved political issues and the lack of finances, only restricted components of this strategy are so far being implemented by the SPECA programme of work on water and energy. Examples are the Chu-Talas and dam safety activities described below.

The UNECE environmental Conventions establish rules for cooperation between neighbouring countries both on the environment and on shared natural resources. Three of these conventions are highly relevant for water cooperation in Central Asia:

- The Convention on the Protection and Use of Transboundary Waters and International Lakes (Water Convention) and its Protocol on Water and Health

- The Convention on Environmental Impact Assessment in a Transboundary Context (EIA or Espoo Convention) and its Protocol on Strategic Environmental Assessment (SEA Protocol)
- The Convention on the Transboundary Effects of Industrial Accidents (Industrial Accidents Convention).

The UNECE Water Convention is of particular importance, as it provides a basic international legal framework for transboundary water cooperation. Uzbekistan recently ratified this Convention, but was only the second Central Asian country to do so, after Kazakhstan. However the relevance and authority of the Convention is recognized by all Central Asian countries and also those which have not ratified the Convention are actively participating in the activities in its programme of work.

The Water Convention prescribes national measures for the protection and environmentally sound management of shared, transboundary water resources. It obliges Parties to prevent, control and reduce water pollution from point and non-point sources. Riparian countries are required to conclude agreements and to create joint bodies for the management of transboundary waters. The Convention further includes provisions for monitoring, research and development, consultations, warning and alarm systems, mutual assistance and the exchange and protection of information, as well as for public access to information. A key provision of the Convention is that “transboundary waters are used in reasonable and equitable way”.

The Water Convention does not deal explicitly with water quantity issues and the allocation of water, a key issue of dispute in Central Asia, but it does set up a framework for the resolution of these and other problems.

The Water Convention’s Protocol on Water and Health aims to protect human health and well-being through improving water management and through preventing, controlling and reducing water-related diseases. To meet these goals, Parties are required to establish national and local targets, tailored to their national conditions and capacities, in the areas of health, water management and infrastructure development and management.

The Protocol is therefore very relevant for all Central Asian countries which pay a very high social cost because of lack of access to safe water and sanitation and water-related diseases - among the most common causes of child mortality. No Central Asian country has ratified it to date but Kazakhstan, Kyrgyzstan and Tajikistan are taking steps towards it.

The assessment of the environmental impact of objects and activities at an early stage of planning, including their cross-border impact, is a well-recognized procedure in modern environmental policy and an important condition for good neighbourly relations between countries. The UNECE EIA Convention obliges States to notify

and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact across borders. The public and non-governmental organizations (NGOs) play a key role in the implementation of the EIA Convention.

Application of the EIA Convention is highly important if water and environmental cooperation are to be improved in Central Asia. It is essential that new projects such as production facilities or water infrastructure with a possible impact on ecosystems be communicated to and discussed with neighbouring countries. For example, a new dam or canal will most likely have significant effects on water flow downstream, and consequently on the ecosystem.

The SEA Protocol has a great potential to enhance water management as it ensures that environmental assessments are integrated into the development of official plans and programmes at the earliest stages.

Kyrgyzstan and Kazakhstan are Parties to the EIA Convention, and Tajikistan and Uzbekistan are preparing to ratify. None of the states are Party to the SEA Protocol.

The UNECE Industrial Accidents Convention was negotiated to protect human beings and the environment from industrial accidents by preventing these as far as possible, by reducing their frequency and severity and by mitigating their effects. The key words are: preparedness, prevention and response. The Convention encourages its Parties to help each other in the event of an accident, to cooperate on research and development, and to share information and technology.

In Central Asia, Kazakhstan is the only Party to the Convention but Uzbekistan and Kyrgyzstan are preparing to become Parties.

The Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) is a fourth UNECE Convention of relevance. It has been ratified by all countries

in the region with the exception of Uzbekistan. Access to information and public participation are important conditions for integrated water resources management, and there are a number of activities, run by different organizations, which support the Aarhus Convention's implementation in Central Asia.

3 UNECE water management activities in Central Asia

The efforts of international organizations to address regional water relations in Central Asia declined around 2000. One reason is that projects aiming to resolve the major issues, such as the water release regime on the Syr Darya, have not been very successful. And even though there are attempts to involve, for example, the UN to play a role in the regional organizations, it is difficult for the Central Asian States to agree on a procedure involving outside mediators.

In recent years, however, UNECE has intensified its engagement with Central Asian water issues. Its approach has been to identify windows of opportunity for the implementation of the UNECE Conventions as well as components of the SPECA regional strategy, to fund-raise and to initiate projects. All projects are implemented on the direct request of participating countries.

These activities, all with extrabudgetary funding, are being developed in close cooperation with the authorities in the region and with regional and international organizations: The Organization for Security and Cooperation in Europe (OSCE), the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP), though the Environment and Security Initiative, as well as UNESCAP. In collaboration with the European Union Water Initiative and the European Commission, UNECE is engaged in developing integrated water resources management in the Central Asian States. In cooperation with Germany and other EU countries, UNECE might also play a role in the implementation of the EU Strategy for Central Asia in the water and energy sectors. Among organizations in the region, UNECE works closely with IFAS, ICWC and EurAsEC.

3.1 Development of new water relations – the Chu and Talas Rivers

Water relations in Central Asia took a significant step forward on 26 July 2006 when the Commission of the Republic of Kazakhstan and the Kyrgyz Republic on the Use of Water Management Facilities of Intergovernmental Status on the Rivers Chu and Talas was inaugurated. The Chu-Talas Commission offers a mutually beneficial way for Kyrgyzstan and Kazakhstan to share responsibility for the water infrastructure used by both countries. Following a bilateral agreement from 2000, Kazakhstan has agreed to contribute to the operating and maintenance expenses of a number of Kyrgyz dams and reservoirs that supply water to both countries. This addresses a contentious issue and constitutes a breakthrough in Central Asian water relations, as the sharing of water resources between upstream and downstream countries has often been characterized by tension and insecurity.

The establishment of the Chu-Talas Commission was supported by an OSCE/UNECE/UNESCAP project ("Chu-Talas I") financed by Sweden and the United Kingdom. The project facilitated the development and approval of the Statute of the Commission as well as guidelines for financing costs of repair, operations and other activities related to water infrastructure. The project demonstrated a coordinated action of international organizations, as the Chu-Talas I project was complemented by activities funded by the Asian Development Bank (ADB). The best practices on transboundary water management between Kazakhstan and Kyrgyzstan are being promoted on the river basin website (www.talaschu.org).

The importance of the bilateral Chu-Talas Commission is demonstrated by the fact it has met five times within less than two years after its inauguration.

A follow-up project started in 2007 ("Chu-Talas II") supports a further broadening of the cooperative efforts to improve the water resources management of the Chu and the Talas. The Commission is

challenged with certain tasks in its practical work that will be addressed by the new project, for instance:

- Updating the methodology of the co-funding of maintenance, operation and reconstruction costs for each water facility
- Developing a unified methodology for volumetric water measurement
- Defining the impact of groundwater flow in the Chu and the Talas and its effect on water allocation

Kyrgyzstan and Kazakhstan have further agreed that opportunities exist for a step-by-step broadening of the functions and mandate of the Commission as well as to revise the bilateral agreement. Cooperation on eco-system protection and water quality issues are examples of possible new functions. Public participation in the decision-making process should also be further developed. In addition to the work by OSCE and UNECE in Chu-Talas II, funded by Finland, ADB will continue its coordinated support for activities of the Commission Secretariat.

3.2 Better information for better water management decisions

The Central Asian Regional Water Information Base Project (CAREWIB), funded by Switzerland, is improving the availability and exchange of information in water and environmental sectors in Central Asia. The project is implemented by the Scientific Information Centre of the Interstate Commission for Water Coordination (SIC-ICWC) in Tashkent in cooperation with UNEP and UNECE. A regional Internet portal (www.cawater-info.net) provides access to up-to-date information on water and related issues in the region. The portal is based on existing information maintained by SIC-ICWC as well as other organizations. Publications in paper format are regularly produced and distributed to increase outreach to policymakers, NGOs and the general public.

An information system for water management in the Aral Sea basin is another component of the project. This system is a practical tool for integrated water assessment that takes into consideration available water resources and their allocation among river reaches, provinces and water-management systems. It includes GIS maps for each of the Central Asian countries. The information system is currently a tool for management and cooperation within the framework of ICWC. However, part of the information will be provided openly through the Internet portal.

What started as an effort to improve information exchange and also coordination between donors is now a much more ambitious project, one aiming to make the information flow on water issues more efficient and transparent in Central Asia. A second phase of the project began in autumn 2007. An important task in the new project phase is to develop national information systems on water issues.

3.3 Environmental impact assessment in a transboundary context

Kazakhstan and Kyrgyzstan, both Parties to the EIA Convention, share the Syr Darya, the Chu and the Talas rivers. Planned activities upstream in Kyrgyzstan with a possible significant impact on the Kazakh environment should be communicated at an early stage to Kazakhstan if the EIA Convention is to be adhered to. Kazakhstan should, according to the Convention, have the opportunity to present its point of view on such planned activities. Projects in Kazakhstan with a possible impact in Kyrgyzstan should similarly be communicated to Kyrgyzstan.

A project funded by Norway and implemented by OSCE and UNECE in cooperation with environmental authorities in Kyrgyzstan and Kazakhstan demonstrates the effective implementation of the EIA Convention. A pilot EIA has been performed according to the provisions of the Convention. The site that has been assessed is a planned gold and copper mine ("Andash") situated close to a tributary of the Talas and to the border with Kazakhstan. Pollution from mining operations is generally a serious problem in

Central Asia, and the issue here is to minimize the risks for future pollution.

A pilot EIA (www.unece.org/env/eia/central_asia.htm) has been successfully completed with the involvement of the public on both sides. In autumn 2008 the EIA procedure will be assessed by international experts. On the basis of the assessment and the work of national experts in Kazakhstan as well as Kyrgyzstan, national procedures and legal texts contributing to an improved implementation of the EIA Convention will be developed. Overall, the project has been very successful and has facilitated the development of a substantial dialogue between the two countries.

3.4 Cooperation to improve water quality

Downstream on the Syr Darya and Amu Darya, two of the major rivers in Central Asia, the poor water quality is having serious negative health effects. Management of water quality is highly inefficient and insufficient both at the national as well as regional levels: national policies and regional cooperation urgently need to be improved, with the ultimate aim of achieving good water quality. In spite of the gravity of the problems, there is currently no systematic cooperation on water quality between the Central Asian countries.

The UN is making funding available to UNECE to improve cooperation and policies on water quality, and a new project will start in autumn 2008. A first step is to establish common principles for the measurement of water quality, joint assessments and the exchange of information between the countries. The development of more efficient national policies, including standards and principles for permitting of environmentally harmful activities, is another key aspect. As the monitoring of water quality has seriously deteriorated since the beginning of 1990s, establishing an efficient monitoring network presents a substantial challenge.

3.5 Dam safety to protect the population

Central Asia has more than 100 major dams and other water control facilities, mostly on rivers shared by different countries. The dams are aging and in some cases not adequately maintained. Meanwhile, the number of people living downstream from these dams is growing. For example, the Fergana Valley, shared by Kyrgyzstan, Tajikistan and Uzbekistan, has 9 million inhabitants. If a dam upstream from this valley were to break, the consequences could be disastrous.

The first phase of a UNECE-UNESCAP project on dam safety was implemented in 2006 which resulted in a publication analysing the present situation (UNECE, 2007a). With the exception of Uzbekistan there is no legislation in the Central Asian states to ensure dam safety monitoring and control.

The first phase of the project resulted also in (a) a model national law on safety of large hydraulic facilities, including dams, intended to be a basis for national harmonized legal frameworks for dam safety, and (b) a draft regional agreement on cooperation on dam safety, which stipulates, inter alia, exchange of information and notification of other countries in case of accidents with dams (UNECE, 2007a).

The Central Asian countries are actively seeking to improve or revise the existing legal provisions and institutional modalities for dam safety. Tajikistan and Turkmenistan have decided to develop laws on safety of hydraulic structures, including dams, by adapting the model law; in Kyrgyzstan, the creation of a national commission on safety of dams is under way; and in Kazakhstan, changes in the Water Code have been proposed to incorporate provisions for regulating dam safety. In Uzbekistan, work is under way to enforce the Law on safety of hydraulic structures, adopted in 1999. All the countries are willing to pursue regional cooperation on dam safety by setting up a legal and institutional framework along the lines of the proposed regional agreement.

A funding agreement was recently signed with Finland to continue the project in 2008–2010. The

objective in the new project phase is to support the countries to improve legal and institutional frameworks on the national level as well as to develop regional cooperation mechanisms.

3.6 Preparedness, prevention and response to industrial accidents

The Industrial Accidents Convention has assessed the situation with regard to preparedness, prevention and response to industrial accidents in Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan through its Assistance Programme for the Countries of Eastern Europe, Caucasus and Central Asia (EECCA) and South-Eastern Europe (SEE). The conclusion was that the countries need assistance to develop policies on industrial safety: adequate legislation as well as proper institutions are needed.

A so far unfunded project in the above-mentioned Assistance Programme in its first phase aims to analyse in more detail deficiencies in the legal and institutional frameworks of the four countries mentioned above. In the second phase of the project, steps will be taken to eliminate these deficiencies. Development of cross-border cooperation aimed at exchanging information on hazardous activities, assessing risks and drawing up compatible emergency plans in border areas is a particularly important direction of work.

3.7 Integrated water resources management at the national level

The National Policy Dialogues are the main mechanism for implementing the work programme of the EU Water Initiative EECCA Component. National Policy Dialogues bring major stakeholders, including government authorities and NGOs, together to improve the management of water resources. The National Policy Dialogues take a long-term and holistic perspective and aim at step-by-step development by contributing to new legislation and improved institutional arrangements, water management instruments, financing strategies, etc. UNECE is the strategic partner of the EU for the EECCA countries on the policy dialogue process related to integrated water

resources management, whereas the Organisation for Economic Co-operation and Development (OECD) is the strategic partner on water supply and sanitation. In 2008, UNECE is initiating National Policy Dialogues in Central Asia, with Kyrgyzstan as the first country. The selected directions of work in the first phase in Kyrgyzstan will be the establishment of a River Basin Council for the Chu basin and the development of a plan of measures on sustainable water management, safe drinking water supply and adequate sanitation based on the provisions of the Protocol on Water and Health.

As there are many organisations involved in IWRM work in the region, measures are taken to achieve synergies and coordination. During autumn 2008 a joint platform for coordination is being set up by UNECE, UNDP, OECD, the EU Commission and other organisations.

3.8 Other activities in the programmes of work of UNECE Conventions

The effectiveness of UNECE Conventions stems not only from the fact that they are a solid legal framework, based on modern, internationally recognized principles and good practices, but also from their programmes of work supporting countries in implementation and in tackling emerging challenges.

In addition to the above-mentioned projects, activities under the programme of work of the UNECE Conventions include (i) development of technical and strategic guidelines to support implementation of the different provisions, (ii) capacity building and (iii) specific activities supporting implementation, compliance and assessment. Central Asian countries, Parties as well as non-Parties, regularly participate and benefit from such activities and products.

Guidelines on monitoring and assessment of transboundary waters (eg. UNECE, 2006) or on sustainable flood management developed under the Water Convention are two examples that are useful tool for Central Asian countries.

Currently the Water Convention is addressing climate change and adaptation of the water and water-related sectors, especially in the transboundary context. Central Asian countries are among the most vulnerable to the adverse effects of climate change in the UNECE region and limited financial resources reduce their adaptive capacity. The Guidance on water and climate under development will become an important instrument for Central Asia as a whole since many of the challenges posed by climate change require regional cooperation and effective regional action.

Another important product of the Water Convention was the first Assessment of Transboundary Rivers, Lakes and Groundwaters in the UNECE region (UNECE, 2007b). It is the first ever in-depth report produced on transboundary waters in the region and has contributions from four of the five Central Asian countries. The second assessment, to be prepared for the next Ministerial Conference Environment for Europe, will have a regional focus on Central Asia.

Similar activities are also developed in the work programmes of the other Conventions. The EIA Convention has developed material guiding the practical implementation of the Convention and also contributed to the development of specific implementation guidelines for Central Asia. In addition to the above mentioned Assistance Programme of the Industrial Accidents Convention, this Convention has contributed to the development of important Safety Guidelines and Good Practices applicable in Central Asia: on pipelines as well as on the management of tailing dams.

4 Challenges

Over the past few years, achievements in the resolution of the main water issues in Central Asia have not been very significant. The basic issues of conflict remain and have even been exacerbated during difficult years such as 2008.

The UNECE approach is to promote the existing international legal framework and to help develop an understanding and capacity for its application in

the region. The UNECE Conventions represents an authoritative interpretation of fairness and reciprocity in the relations between countries thus being a counterweight to the political and economic agendas that are the starting point for the difficult negotiations in the region. Although the UNECE conventions cannot resolve all of the difficult and sometimes unique problems that are found in Central Asia, they can contribute to the development of mutual understanding and establishment of shared principles.

UNECE activities are all implemented in close cooperation between partners in the region and international partners. A key objective is to develop the capacity in Central Asia – planting the seeds for the future. Cooperation and coordination are vital to ensure that decision makers have time to take part in important activities; experts in the region are frequently overloaded with activities organized by international and donor organizations.

The challenge for UNECE and its Conventions is to take a long-term perspective in their work in the region, assess their impact and to develop further the understanding of how to apply the various conventions in the Central Asian environment. In this context it is worth mentioning that the Water Convention has started developing a guide for ratification of the Convention that potentially would help Central Asian countries to develop their water cooperation.

The UNECE strategy for the future is to continue, while building on its achievements, the implementation and further development of projects and activities supported by Central Asian countries that contribute to moving the political agenda forward and to the resolution of the problems in the region.

A final key aspect requiring more attention in Central Asia, as well as from international organizations and bilateral donors, is that of energy efficiency. Access to energy is at the root of the problems facing Kyrgyzstan and Tajikistan, and seriously impacts water relations in the region. It is always more cost-efficient and quicker to save energy

than to build new power-generating facilities, and efforts to develop energy efficiency in Kyrgyzstan and Tajikistan are thus of great importance for all of Central Asia. UNECE is also active in this area, but a lot more needs to be done.

Acknowledgment

The views expressed in this chapter are those of the author and not necessarily reflect the views of the United Nations Economic Commission for Europe.

Endnote

1. For more information about SPECA, see <http://www.unece.org/speca/>.

References

UNECE, 2006. *Strategies for monitoring and assessment of transboundary rivers, lakes and groundwaters*. UN Economic Commission for Europe, Geneva, ISBN 92-1-116951-8.

UNECE, 2007a. *Dam safety in Central Asia: Capacity building and regional cooperation*. UN Economic Commission for Europe, Geneva, The Water Series, No. 5, ISBN 978-92-1-416027-4.

UNECE, 2007b. *Our Waters: Joining hands across borders. First Assessment of Transboundary Rivers, Lakes and Groundwaters*. UN Economic Commission for Europe, Geneva, ISBN 978-92-1-116972-0. Also available online at <http://www.unece.org/env/water>.

UNECE, UNESCAP, 2004. *Strengthening cooperation for rational and efficient use of water and energy resources in Central Asia*. Special Programme for the Economies of Central Asia (SPECAs). UN Economic Commission for Europe, Geneva, ISBN 92-1-101070-5. Also available online at: http://www.unece.org/speca/energy/energ_he.htm.

This publication is available electronically at
www.water.tkk.fi/global/publications